

## 5C CHUCK W.2-1/4 BACKPLATE

# 5C Collet Chuck with 2-1/4" Back Plate Instruction Manual

**Brand:** Generic | **Model:** 5C CHUCK W.2-1/4 BACKPLATE

### INTRODUCTION

This manual provides essential information for the proper setup, operation, and maintenance of your 5C Collet Chuck with a 2-1/4" x 8 threaded semi-finished adapter back plate. This precision tool is designed for use with lathes, ensuring high accuracy and stability for various machining tasks. Please read these instructions carefully before use to ensure safe and efficient operation.

### PRODUCT OVERVIEW

The 5C Collet Chuck is engineered for precision, featuring a 5-inch outside diameter and a plain back with a recessed area of 3.740" x 0.184" deep. It incorporates a 3-pinion gear operated design, which enhances ease of opening and closing while providing superior accuracy and stability compared to chucks with fewer pinion gears. This chuck is compatible with 5C collets ranging from 1/16 inch through 1-1/8 inches.



Image: The 5C Collet Chuck assembly, including the main chuck body and the threaded back plate.

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Image: Individual components of the 5C Collet Chuck, showing the chuck body, the semi-finished back plate, and the operating keys.

## SETUP INSTRUCTIONS

- 1. Back Plate Preparation:** The included back plate is semi-finished and threaded (2-1/4" x 8). The mounting holes are pre-drilled and tapped. For optimal accuracy, it is recommended to perform the final surfacing and registration boss turning on your own lathe. This process ensures the highest possible Total Indicator Runout (TIR) accuracy for your specific machine.
- 2. Surfacing the Back Plate:** Mount the semi-finished back plate onto your lathe spindle. Lightly surface the front face of the back plate.
- 3. Turning the Registration Boss:** Carefully turn the registration boss on the back plate to match the actual recess of the 5C Collet Chuck. This precise fit is critical for minimizing runout.
- 4. Mounting the Chuck:** Align the 5C Collet Chuck with the prepared back plate. The chuck has 3 mounting holes with a diameter of 0.35" and a bolt pattern of 4.25". The back plate has 3 M8 mounting screw holes, which are already drilled and tapped.
- 5. Securing the Assembly:** Use the provided bolts to securely fasten the 5C Collet Chuck to the back plate. Tighten all bolts evenly to ensure a stable and accurate assembly.



Image: Close-up view of the semi-finished 2-1/4 inch threaded back plate, showing the mounting holes and threaded center.

## OPERATING INSTRUCTIONS

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- 1. Collet Insertion:** Ensure the chuck is open. Insert the desired 5C collet into the chuck. The chuck can accommodate any 5C collet size from 1/16 inch to 1-1/8 inches.
- 2. Workpiece Insertion:** Place the workpiece into the collet.
- 3. Tightening the Collet:** Use the provided operating keys to close and tighten the 3-pinion gear mechanism. Turn the keys clockwise to secure the collet and workpiece firmly. Do not overtighten.
- 4. Operation:** The chuck is designed for a maximum RPM of 6000. Always operate within safe speed limits for your lathe and workpiece.
- 5. Accuracy:** The chuck is manufactured to an accuracy of 0.0006 TIR. However, actual runout can be influenced by the accuracy of the 5C collet used and the runout of the lathe spindle itself.

# 3 pinion gears assures much higher accuracy and much higher stability



Image: The 5C Collet Chuck with operating keys inserted, demonstrating how to tighten or loosen the collet.

## MAINTENANCE

- **Cleaning:** After each use, clean the chuck and collets to remove chips, dust, and debris. Use a brush and compressed air if available.
- **Lubrication:** Periodically apply a light machine oil to the moving parts of the chuck, especially the pinion gears and threads, to ensure smooth operation and prevent corrosion.
- **Storage:** Store the collet chuck in a clean, dry environment to protect it from rust and damage.
- **Inspection:** Regularly inspect the chuck for any signs of wear, damage, or excessive runout. Address any issues promptly to maintain performance and safety.

## TROUBLESHOOTING

- **High Runout:** If you experience higher than expected runout, first verify the accuracy of the 5C collet being used. Next, check the runout of your lathe spindle. Ensure the back plate was properly surfaced and the

registration boss accurately turned during setup. Re-check the tightness of the mounting bolts.

- **Difficulty Opening/Closing:** Ensure the chuck is clean and free of debris. Apply a small amount of lubricant to the pinion gears and internal mechanisms. If the issue persists, inspect for any physical damage or obstruction.
- **Back Plate Alignment Issues:** If the back plate does not align correctly or causes excessive runout, re-evaluate the surfacing and turning process performed on your lathe. Precision in this step is crucial for the overall accuracy of the chuck assembly.

## SPECIFICATIONS

Feature	Specification
Chuck Outside Diameter	5 inches
Back Plate Type	Plain Back, Recessed 3.740" x 0.184" Deep
Back Plate Thread Size	2-1/4" x 8 Threaded
Chuck Mounting Holes	3 holes, Diameter 0.35", Bolt Pattern 4.25"
Back Plate Mounting Screw Holes	3 M8 holes (drilled and tapped)
Max. RPM	6000
Accuracy (TIR)	0.0006 inches
Collet Capacity	1/16" through 1-1/8" (5C Collets)
Material	Alloy Steel
Item Weight	19 pounds
Manufacturer	ZJ MACHINIST

## WARRANTY AND SUPPORT

Specific warranty information for this product is not provided in the available documentation. For any support inquiries, technical assistance, or questions regarding your 5C Collet Chuck, please contact the seller or manufacturer directly through your purchase platform. Ensure you have your product model number and purchase details ready when contacting support.